

# ALSTON & BIRD LLP

601 Pennsylvania Avenue, N.W.  
North Building, 10<sup>th</sup> Floor  
Washington, DC 20004-2601

202-756-3300  
Fax: 202-756-3333  
www.alston.com

Adrian Copiz

Direct Dial: 202-756-3572

E-mail: [adrian.copiz@alston.com](mailto:adrian.copiz@alston.com)

February 14, 2006

## *Via Hand Delivery*

Commission's Secretary  
Office of the Secretary  
Federal Communications Commission  
c/o Natek, Inc.  
236 Massachusetts Avenue, NE  
Suite 110  
Washington, DC 20002

RECEIVED

FEB 14 2006

Federal Communications Commission  
Office of Secretary

**Re: ET Docket No. 05-356 – Petition of Octatron, Inc. and Chang Industry, Inc.  
for Waiver of Sections 15.247(b), 15.247(e), and 15.249(a) of the Rules and  
Regulations**

Dear Ms. Dortch:

Octatron, Inc. and Chang Industry, Inc. hereby file with this letter an original and four copies of their reply comments in ET Docket No. 05-356, petition for a waiver of certain rules and regulations of the Federal Communications Commission.

Please enter these reply comments into the docket for this proceeding and date-stamp and return the extra copy of this filing.

Sincerely,



Adrian Copiz  
Counsel to Octatron, Inc. and Chang  
Industry, Inc.

Enclosure

Cc: See Certificate of Service (Reply Comments only)

One Atlantic Center  
1201 West Peachtree Street  
Atlanta, GA 30309-3424  
404-881-7000  
Fax: 404-881-7777

Bank of America Plaza  
101 South Tryon Street, Suite 4000  
Charlotte, NC 28280-4000  
704-444-1000  
Fax: 704-444-1111

90 Park Avenue  
New York, NY 10016  
212-210-9400  
Fax: 212-210-9444

3201 Beechleaf Court, Suite 600  
Raleigh, NC 27604-1062  
919-862-2200  
Fax: 919-862-2260

044  
JAN 20 2006  
FEB 14 2006

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In re Petition of: )  
 )  
Octatron, Inc. and Chang Industry, Inc. )  
 ) ET Docket No. 05-356  
For Waiver of Sections 15.247(b), )  
15.247(e), and 15.249(a) of the Rules )  
and Regulations )

**RECEIVED**

To: Marlene H. Dorch, Secretary

FEB 14 2006

For transmission to: Chief of the Office  
of Engineering and Technology

Federal Communications Commission  
Office of Secretary

**REPLY COMMENTS**

1. Octatron, Inc. and Chang Industry, Inc. ("Petitioners"), by their attorneys, hereby respectfully submits reply comments to the comments submitted by the following parties: American Petroleum Institute ("API"); Cellnet Technology, Inc. ("Cellnet"); IEEE 802.18 group within the IEEE ("IEEE"); National Association for Amateur Radio ("ARRL"); Sensus Metering Systems, Inc. ("Sensus"); SpectraLink Corporation ("SpectraLink"); Sprint Nextel Corporation ("Sprint"); jointly Telesaurus Holdings GB, LLC and Warren C. Havens (together "Telesaurus"); TriSquare Communications ("TriSquare"); and, James E. Whedbee ("Mr. Whedbee").

**Comments of API**

2. API submitted comments stating that interference from the Petitioners' devices will disrupt the functions of other devices in the 902-928 MHz band. Specifically, API claims that the Petitioners' devices could "render worthless equipment that is used by petroleum and natural gas companies."<sup>1</sup> Although the Petitioners certainly respect the needs and concerns of other industries and businesses about the potential impact of its devices on their own, this specific concern appears to be overstated. It will be the rare instance, if any, where Petitioners' devices will be used in the immediate vicinity of the equipment of petroleum and natural gas companies, and such brief interference, if any, will certainly not render that API equipment "worthless." Additionally, API references a wide range of frequencies that oil and energy companies use (Part 90 Private Land Mobile Radio Services, Part 101 Private Operational-Fixed Microwave Services, Parts 80 and 87 radio facilities, and unlicensed systems at 902-928 MHz, 2.4 GHz, and 5.8 GHz

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<sup>1</sup> API Comments at ¶ 8.

bands), but makes no claim of specific interference it anticipates will occur if Petitioners are granted this waiver.<sup>2</sup> Consequently, Petitioners are relegated to making a very general response that their devices pose no significant risk of interference with the general classes of devices cited by API, and further, are hard pressed to conceive of a situation in which the use of individual API devices and their related functions are so critical that a high priority police or anti-terrorist operation should not take precedence.

3. API also questions the Petitioners' claim as to the infeasibility of manufacturing a device compliant with the Rules. The Petitioners have carefully researched and studied this issue, and while they have made every effort to comply, are still faced with certain technical limitations and cost implications that render compliance infeasible. In fact, even while questioning the "infeasibility to manufacture a compliant device" in its opposition, API acknowledges that there may be some technical limitations that could increase the cost and the power consumption of the Petitioners' devices. In fact, both of these issues have significant impact on the ability of Petitioners to meet the cost requirements of the primary intended market for their devices - namely law enforcement organizations (all of which operate on very limited budgets for such products). The Federal Communications Commission ("FCC") recognized costs of compliance as a critical factor when it granted a similar waiver to Remington Arms Company, Inc. ("Remington"): "... digital modulation would increase the cost of the devices to police departments, preventing some departments from being able to obtain this equipment . . . ."<sup>3</sup> Further, in reaching its decision to grant the waiver to allow Remington to use analog rather than digital, the FCC noted that failing to do so would require Remington to redesign its product, thereby driving up costs and limiting its availability to law enforcement.<sup>4</sup>

4. Petitioners herein are faced with the same challenges as Remington, if they are required to use digital modulation – increased size and weight. Digital modulation requires more power, and consequently the need for increased battery size, which adds to the size and weight of the devices and drives up its cost. In addition, increased battery size and weight would likely cause the device to be too large and unwieldy to be easily carried and deployed by law enforcement in the midst of critical operations, thereby further reducing their marketability.

5. The Petitioners are willing to consider the API suggestion that any waiver should be conditioned to limit sales only to law enforcement agencies, but would agree to any such condition only once it has seen any other conditions objectors and/or the FCC consider necessary, so that it may quantify the entirety of the conditions to be imposed as part of the waiver. What Petitioners can say at this point in time is that the intended users are law enforcement agencies, and it is the use by law enforcement agencies that provides the public interest which underlies waiving the FCC Rules. Additionally, Petitioners observe that by narrowing sales to law enforcement only, it would ensure both the limited

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<sup>2</sup> API Comments at ¶¶ 2-3.

<sup>3</sup> See In the Matter of Remington Arms Company, Inc. Request for a Waiver of Part 15 Regulations, Order, ET Docket No. 05-183, FCC 05-194, at ¶ 17 (rel. Nov. 18, 2005) ("Remington Waiver").

<sup>4</sup> Id.

and proper use of their devices, which should also significantly minimize any concerns with respect to interference.

### **Comments of Cellnet**

6. Cellnet, a provider of real-time automated meter reading services, also recommends that any waiver be limited for sales to law enforcement organizations. In making its recommendation, Cellnet “recognizes that the [Petitioners’] Dragon Egg System may provide important public safety benefits.”<sup>5</sup>

7. Cellnet also recommends that any waiver preclude permanent or fixed operations. Since permanent or fixed operation of the Petitioners’ devices is not the intended function for which the devices are designed, Petitioners are prepared to consider a waiver having such a condition.

8. Cellnet further recommends that any waiver should be limited to a period of 18 months as an incentive for the Petitioners to develop a Part 15 compliant product. The Petitioners do not support this recommendation. Although the Petitioners have worked to develop Part 15 compliant devices, and will continue to do so, should the waiver be granted, establishing a limitation on how long the waiver is valid is problematic. Although Petitioners continue to seek a technological solution that would permit economically and operationally feasible Part 15 compliance, it is very difficult to predict the rate of technical innovation. Placing an 18 month limitation on the Petitioners’ waiver, but not on the Petitioners’ key competitor Remington, would put an inequitable burden on Petitioners and seriously erode the long term potential for fair competition between the companies, which ultimately will disadvantage end users by potentially creating a monopoly that could result in higher prices. Petitioners respectfully note, that in the Remington proceeding Cellnet also recommended an 18 month time limit,<sup>6</sup> but the FCC chose not to incorporate such a recommendation in granting a waiver to Remington.

9. Cellnet likewise provided some general policy considerations, particularly with respect to ensuring there is a significant public benefit and that there is not a significant threat of interference. Petitioners’ prior responses herein regarding those issues as similarly raised by API are incorporated herein by this reference thereto.

### **Comments of IEEE**

10. IEEE provided some general comments about ensuring the coexistence between devices, but of greatest concern to Petitioners is its assertion that the waiver should not be granted because it does not serve a broad public interest, particularly the economic interests of other vendors, presumably intended to address Petitioners’ competitors (the latter of which is not required for FCC consideration in granting a waiver). In contrast, as detailed in Petitioners’ request, a waiver will serve the broad public interest in two very significant areas – law enforcement and counter-terrorism operations. Evidence of

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<sup>5</sup> Cellnet Comments at ¶ 4.

<sup>6</sup> Id. At ¶ 7.

Petitioners' waiver serving the public interest is the enclosed letter from the Sheriff's Department of the County of Los Angeles (L.A. Sheriff's Department"), Petitioners' Attachment I.<sup>7</sup> According to this leading crime enforcement organization, which has an international reputation for integrating new technologies for law enforcement, and which has worked with Chang Industries, Inc. for several years, the devices developed by Petitioners would enhance the L.A. Sheriff's Department's crime fighting abilities. As such, the grant of the waiver would serve the public interest by allowing the L.A. Sheriff's Department and other law enforcement organizations to gain an edge in preventing crime and promoting safety of life.<sup>8</sup> Petitioners are sure that even IEEE would concede that there are few parties in a better position to comment as to when a waiver meets the threshold for serving the public interest than the L.A. Sheriff's Department.

11. IEEE states that by granting Petitioners' request, there is a danger of setting a precedent by waiving the rules in Section 15.247. The granting of Petitioners' request for a waiver, however, cannot set such a precedent as the Commission has already established such a precedent through its grant of the Remington waiver of section 15.247, notwithstanding that concern.

12. Finally, IEEE raises the interference issue relating to devices conforming to IEEE 802.15.4 for various applications, some of which may include important sensors and alarms. IEEE also speculates that use of such IEEE 802.15.4 compliant devices will become widespread, although it concedes that such is currently not the case. While Petitioners appreciate IEEE's role in setting standards, the likelihood of a conflict of an IEEE 802.15.4 compliant device with the Petitioners' devices is very limited because the devices IEEE describes are not yet widely used; and even if they are, it would be in the context of the rare instance when the Petitioners' devices are being used by law enforcement, and likely then only as part of a superseding police action. As described by the L.A. Sheriff's Department, such "situations routinely require the evacuation of neighboring homes, buildings, and apartments and the usage of the devices would be short in duration."<sup>9</sup> Any interference with a sensor or alarm system would be of secondary priority to the immediate resolution of the police action.

### **Comments of ARRL**

13. ARRL raises concern as to the actual intent of the Petitioners' in seeking a waiver, and is apparently looking for assurance that the intended users will be law enforcement agencies, a commitment Petitioners' have made hereinabove and incorporate once again in response to ARRL's objections. Even if there were total interference, as ARRL is apparently alleging, with other devices in the 902-928 MHz band, the

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<sup>7</sup> See <http://www.lasd.org/lasdabout.html> (viewed Feb. 9, 2006). Los Angeles County is the largest County in the United States, with a population of 10,226,506 as of January 2005. See <http://www.lacounty.info/overview.htm> (viewed Feb. 9, 2006).

<sup>8</sup> The FCC determined that promoting safety of life, as the Petitioners' device will do, serves the public interest. See Remington Waiver at ¶ 6.

<sup>9</sup> See L.A. Sheriff's Department Letter at ¶ 3.

occasional use of the devices by law enforcement for crime enforcement and potential counter-terrorism operations is so critical to the public interest that temporary interference, if any, should be permissible to ensure the safety of the public.

14. ARRL suggests the Petitioners' request should be the subject of a rulemaking rather than a rule waiver. Section 1.925 of the FCC's Rules permit for rule waivers and the FCC has discretion to waive the rules "where particular facts would make strict compliance inconsistent the public interest."<sup>10</sup> That is what the Petitioners' request, a very limited exception and not an across the board change of the rules. As demonstrated in its initial request and herein, the requested waiver and justification provided by the Petitioners meet the requirements Section 1.925 of the FCC Rules.

15. ARRL asserts that there is no market for the Petitioners' device. As evidenced by Attachment I, as well as by law enforcement filings made in the Remington proceeding (ET Docket No. 05-183), there is a genuine need – and therefore a market – for the Petitioners' product.

16. ARRL also claims that there was no showing that the devices could not be made in accordance with the FCC's Rules. As discussed in the in the Petitioners' request for waiver and hereinabove, it is not possible to provide sufficient battery power given the operational size requirements of the devices, without a waiver. ARRL suggests that COFDM transmitters would provide an option that meets the FCC's Rules; however, that is not a feasible option. Petitioners have experience with COFDM, finding it useful for certain applications, but it is not a feasible solution for the devices subject to the waiver request. COFDM may be a good alternative in devices where size is not a concern. For a 1 Watt transmitter with COFDM it would require about 12 Watts of battery power in contrast with an analog system which requires about 3.5 Watts. Digital modulation requires not only more battery power, but also involves more complex circuitry resulting in larger size and weight. As noted hereinabove, this renders Petitioners' Dragon Egg device, for example, too large to be handled by law enforcement in the operational environments in which it is expected to be used. Until digital modulation with lower power, size and weight becomes available, law enforcement should not be denied the use of the Petitioners' devices. To do so would render moot the entire purpose for having a public service exception basis for a waiver.

### **Comments of Sensus**

17. Sensus and the comments of other parties suggest a need for demonstrations with respect to interference. To the extent the FCC needs additional information to make its determination regarding interference, the Petitioners are prepared to cooperate in providing such data, provided, however, that the scope of the data sought and the expense in obtaining it are reasonable. Nonetheless, as stated hereinabove, any interference that occurs will be so limited as to locations and the context in which it occurs (i.e., law

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<sup>10</sup> Northeast Cellular Telephone, Co. L.P. v. FCC, 897 F.2d 1164, 1166 (D.C. Cir. 1990). See also WAIT Radio v. FCC, 418 F.2d 1153 (D.C. Cir. 1969, rehearing denied, 459 F.2d 1203 (D.C. Cir. 1972), cert denied 409 U.S. 1027.

enforcement operations), that the overall effects on other equipment in the 902-928 MHz band will be minimal, if any.

### **Comments of SpectraLink**

18. SpectraLink expresses concern that hospitals, FEMA, local police, and fire departments use communications equipment with which the Petitioners' devices could interfere, but this is a highly tenuous basis for opposition. The use of the Petitioners' devices would, generally, be used under very limited circumstances, and then, even when used, it is extremely unlikely that any law enforcement operations would take place in a hospital, at a FEMA location, or in conjunction with fire department activities, without the knowledge and participation of those authorities. In the event that there is any interference with other public safety agency equipment, the police, as sophisticated users of their equipment, would be well aware of what their tactical priorities are to ensure they use the right equipment under a given set of circumstances so as to minimize and/or eliminate outright any such interference.

19. As to other interference and technical concerns raised by SpectraLink, such as with respect to 25% of the bandwidth being used and that height will increase interference, the Petitioners' device will use 3.5 MHz per color or black and white video per channel, and not all possible channels will be used. As for height, the geographic area of potential interference may increase with height, but use at notably higher locations would be infrequent and of short duration.

20. In contrast to SpectraLink's claim, grant of the waiver would not disrupt the orderly administration of frequencies. Rather, as discussed more fully above, granting the waiver would be a part of administering spectrum in an orderly fashion by allowing for a deviation from the rules for under appropriate and exigent circumstances in order to serve the public interest.

### **Comments of Sprint Nextel**

21. Sprint Nextel raises interference concerns both with respect to its Direct Talk service operating in the 902-928 and its specialized mobile radio ("SMR") operations in the adjacent 896-901 MHz band. As for the 902-928 MHz band, as discussed in these reply comments, any interference that occurs will be limited as to time and place. The operational bandwidth will be at 3.5 MHz per color or black and white video per channel and the devices will use frequency modulation.

22. As to the SMR operations, the Petitioners' testing of the devices has not revealed any emissions in the 896-901 MHz band. When the Petitioners' Dragon Egg device, for example, is tossed, the transmission remains on channel and does not migrate to other bands. This is accomplished through the use of a synthesizer control mechanism.

23. As discussed hereinabove, and contrary to Sprint Nextel's assertion, there is sufficient justification for granting the waiver considering the significant public benefit

without frustrating the intent of the applicable rules. Sprint Nextel also questions whether such a device is really for law enforcement, but, the Petitioners' again, are willing to consider a condition that grant of a waiver be limited to sales to law enforcement agencies. Sprint Nextel also suggests that the Petitioner operate at 2.4 GHz, where Remington was granted a waiver. The Petitioners, however, are developing the devices in the 902-928 MHz band because a significant advantage at this frequency band over the 2.4 GHz band is that there is better penetration of walls, which provides for better reliability and quality of image, and far greater safety and therefore utility to law enforcement officers.

### **Comments of Telesaurus**

24. The interference concerns of Telesaurus at this time are speculative because the operations of Telesaurus' Intelligent Transportation System ("ITS") in the 902-928 MHz band are still in the planning stages.<sup>11</sup> Full implementation of its plans is not a certainty. Furthermore, implementation of ITS at the 902-928 MHz band by other companies has been very limited because of significant interoperability issues, with many companies having urged the FCC to adopt interoperability standards at the 5.9 GHz band.<sup>12</sup> E-ZPass, for example, indicated that it expects any operations it has in the 902-928 MHz band to be migrated to the 5.9 MHz band.<sup>13</sup> Law enforcement should not be prevented from having a highly valuable tool to ensure the public safety because of a service that might or might not become operative and with which there might, on rare occasion, be interference, which, moreover, would not be harmful due to the very temporary nature of the emissions from Petitioners' devices. Furthermore, use of the Petitioners' devices poses no risk whatsoever to any ITS systems in 5.9 GHz band, and any of the other frequency bands that might be related to ITS, such as RFID. Once again, in the unlikely event there is any brief interference with an ITS network operating at the 902-928 MHz band, this concern is far outweighed by serving the public interest to ensure that law enforcement may make use of bandwidth to carry out its operations occurring over a brief period of time.

25. Telesaurus also states that the waiver request lacks support by failing to demonstrate a need for the devices and explaining why analog modulation is required. Attachment I, as well law enforcement filings made in the Remington proceeding (ET Docket No. 05-183), establish that there is a genuine need – and therefore a market – for the Petitioners' product. As described in the petition and herein, analog modulation is required to maintain the small size of the devices and to provide a higher quality image that does not suddenly become impaired as is more likely to occur with digital modulation.

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<sup>11</sup> Comments of Telesaurus at footnote 2.

<sup>12</sup> See In the Matter of Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band); Amendment of Parts 2 and 90 of the Commission's Rules to Allocate the 5.850-5.925 GHz Band to the Mobile Service for Dedicated Short Range Communications of Intelligent Transportation Services, Report and Order, WT Docket No. 01-90; ET Docket No. 98-9519, FCC Rcd 2458, at ¶ 12 (Rel. December 17, 2003).

<sup>13</sup> Id. at footnote 43.



### **Comments of TriSquire**

26. TriSquare claims that that the proposed devices create a cost advantage for the Petitioners. The design of the devices is driven less by cost and more by functionality to ensure a small size for handling by law enforcement officers under adverse conditions. To extent the configuration of the devices keeps the cost low so that it is affordable for law enforcement organizations, this too is a benefit, as recognized by the FCC.<sup>14</sup> TriSquare likewise raises the interference concern. Petitioners' comments above in response are incorporated herein by reference.

### **Comments of Mr. Whedbee**

27. Mr. Whedbee recommends the use of a directional antenna (parabolic or yagi). The recommendation for a parabolic or yagi antenna is not feasible because such an antenna would be too large for law enforcement agents to carry and deploy the Petitioners' devices. This is especially the case with operations that move at an extremely fast pace and might last for only a few seconds. The rapid sequence of tossing Petitioners' Dragon Egg into a hostile environment, immediately observing a full 360 degree view, and quickly entering the hostile environment does not allow for time to erect and point a directional antenna from the receive side to line up with the Dragon Egg transmit antenna.

### **Conclusion**

28. The Petitioners hereby restate their request that the FCC grant a waiver of the emission limit in 47 CFR 15.249(a), the emission type in 47 CFR 15.247(b)(3), and waiver of 47 CFR 15.247(e) to permit the manufacture and sale of the Petitioners' devices with a one Watt power limit.

29. Section 1.925 of the FCC's Rules will be served by allowing law enforcement officers to gain access to technology that will greatly enhance their capabilities in preventing crime and countering terrorism, ultimately saving lives. Grant of the waiver will serve the higher public interest of promoting national defense and safety of life and property, significant underlying purposes of the FCC's mandate in Section 1 of the Communications Act of 1934.

Respectfully submitted,



William P. Cook  
Adrian B. Copiz  
Counsel to Octatron, Inc. and  
Chang Industry, Inc.

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<sup>14</sup> Remington Wavier at ¶ 17.

## ATTACHMENT I



LEROY D. BACA, SHERIFF

County of Los Angeles  
Sheriff's Department Headquarters  
4700 Ramona Boulevard  
Monterey Park, California 91754-2169



February 7, 2006

Electronically Filed  
Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
Washington, DC 20554

Re: ET Docket No. 05-356

Dear Secretary Dortch:

The Los Angeles County Sheriff's Department has gained an international reputation for our efforts in identifying, developing and integrating technologies for law enforcement applications. Many of these new technologies provide the ability to detect and safely apprehend dangerous suspects never imagined even a few years ago.

For several years we have been working with Chang Industries to develop various means of observing barricaded suspects while remaining out-of-sight. Chang Industries has developed two successful prototype small cameras that provide the Sheriff's Department this capability. One is a camera inserted on a pole allowing officers to assess situations in attics, crawl spaces, on top of buildings, etc.; the other is a camera for insertion through doors or windows.

These devices transmit their information using radio frequencies your agency regulates. In the event these devices would be deployed, the situations routinely require the evacuation of neighboring homes, buildings, and apartments and the usage of the devices would be short in duration.

We are aware that other developers have received a waiver for the use of similar devices and we are requesting your consideration to support a similar waiver for Chang Industries. If we may provide any more information or be of any service, please contact Commander Charles "Sid" Heal, (CSHeal@lasd.org or 323-526-5466) of our Technology Exploration Project.

Sincerely:

LEROY D. BACA, SHERIFF

DAVID R. BETKEY, A/CHIEF  
OFFICE OF HOMELAND SECURITY

*A Tradition of Service*

### Certificate of Service

I, Adrian B. Copiz, an attorney with the law firm of Alston & Bird, LLP, do hereby certify that a true and correct copy of the foregoing Reply Comments was served by U.S. mail, first class, postage-prepaid on the 14<sup>th</sup> day of February, 2006, on the following individuals:

Julius P. Knapp  
Deputy Chief  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room 7-C250  
Washington, DC 20554

Karen Rackley  
Chief, Technical Rules Branch  
Policy and Rules Division  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

John A. Reed  
Senior Engineer  
Technical Rules Branch  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room 7-A140  
Washington, DC 20554

Bruce A. Romano  
Associate Chief/Legal Counsel  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room 7-A164  
Washington, DC 20554

Alan J. Scrimie  
Chief, Policy & Rules Division  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room 7-B133  
Washington, DC 20554

Gerald A. Matise  
Deputy Chief, Policy & Rules Division  
Office of Engineering and Technology  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

Warren C. Havens and  
Telesaurus Holdings GB, LLC  
D.B.A., LMS Wireless  
2649 Benvenue Ave., #2  
Berkeley, CA 94704

TriSquare Communications  
1420 NW Vivion Rd.  
Suite 113  
Kansas City, Missouri 64118

James Edwin Whedbee, M.Ed.  
4415 NE 55<sup>th</sup> Street  
Kansas City, MO 64119-2848

Trey Hanbury, Esq.  
Director Spectrum Proceedings  
Government Affairs  
2001 Edmund Halley Drive  
Reston, VA 20191

J. Spool  
Vice President and General Counsel  
Sensus Metering Systems, Inc.  
1701 Byrd Ave.  
Richmond, VA 23230-3011

Masood Garahi  
CTO, Executive Vice President,  
Engineering  
Spectralink Corporation  
5755 Central Avenue  
Boulder, CO 80301

Michael J. Lynch  
Chair, IEEE 802.18 Radio Regulatory TAG  
2221 Lakeside Blvd.  
Richardson, TX 75082

Wayne V. Black  
Nicole B. Donath  
Keller and Heckman LLP  
1001 G Street, Suite 500 West  
Washington, DC 20001

Randolph H. Houchins  
General Counsel  
Cellnet  
30000 Mill Creek Avenue  
Suite 100  
Alpharetta, GA 30022

Christopher D. Imlay  
General Counsel  
Booth, Freret, Imlay & Tepper, P.C.  
14356 Cape May Road  
Silver Spring, MD 20904-6011

By:



Adrian B. Copiz